



Clinical Review and Case Report: Treatment Modalities for Microstomia Patients

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Case Report

A patient with a **history of squamous cell carcinoma (SCC) of the upper lip** treated via resection, radiation, and subsequent reconstruction presented with severe microstomia and difficulty with mastication, speech, and oral hygiene. **Chief complaint:** “I am here because I had all but two of my upper teeth removed, and now I can’t have a denture because I was told my mouth is too small.”

Evaluation included:

- Clinical/radiographic examination
- Digital intraoral scanning
- OMFS consultation

Clinical findings included:

- Partial edentulism of both the maxillary and mandibular arches
- Fibrotic soft tissues
- Restricted mandibular movement
- Limited intraoral access

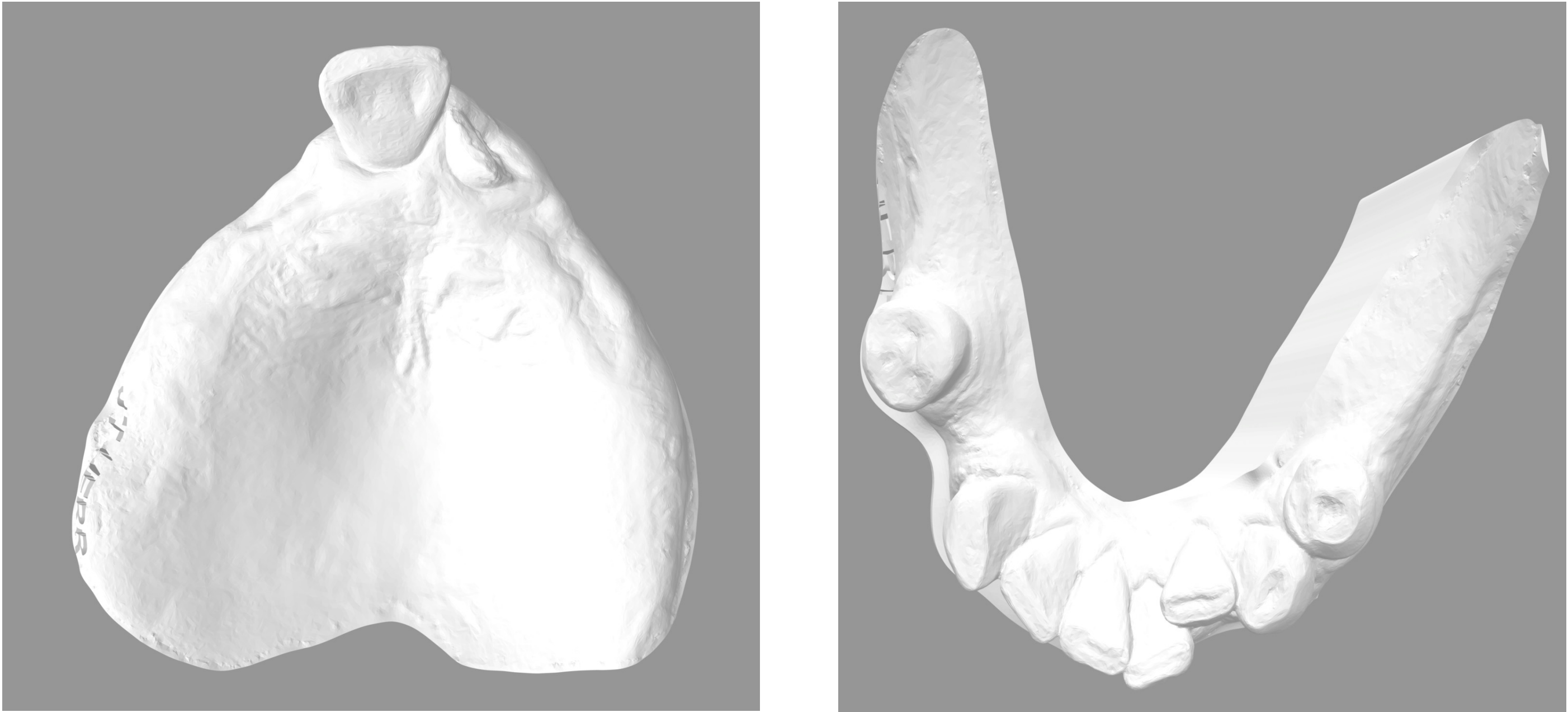


Figure 2. Scans completed with the Trios intraoral scanner.

Clinical Challenges

The **restricted oral aperture is the primary clinical difficulty**, limiting access for:

- Examination
- Border molding and impression-making
- Handpieces and surgical instrumentation
- Prosthesis fabrication and delivery
- Oral hygiene maintenance

Alternative techniques to conventional stock trays include:

- Sectional custom trays
- Moldable aluminum trays
- Modified impression techniques

These approaches may increase the risk of:

- Impression and cast deformation
- Dimensional inaccuracies
- Compromised prosthetic outcomes

***Sectional impressions require precise alignment and reassembly, which can introduce errors at the junction.**

***Adjunctive therapies** such as **dynamic commissure-stretching splints** may improve mouth opening, especially in burn-related microstomia.

Treatment Modality Considerations

Removable and fixed treatment options based on:

- Degree of restricted mouth opening
- Dentition status
- Underlying etiology

Removable prosthodontic options:

- Sectional/collapsible complete dentures with palatal hinges or stud attachments
- Swing-lock mandibular dentures
- Flexible acrylic resin dentures with soft liners
- Magnet-retained sectional dentures
- Flexible nylon thermoplastic dentures
- Telescopic double-crown prostheses

Digital workflows have been shown to improve treatment feasibility, including:

- Digital impression-taking/intraoral scanning with compact scanner tips
- 3D-printed frameworks and milled PMMA components

Fixed implant-supported options include:

- Horizontally screw-retained prostheses
- Buccal screw-access prostheses
- Ball or LOCATOR attachment overdentures
- Conventional implant-fixed rehabilitation

***Surgical adaptations may include short-shank or pediatric handpieces, freehand implant placement, and extraoral or transcutaneous surgical approaches.**

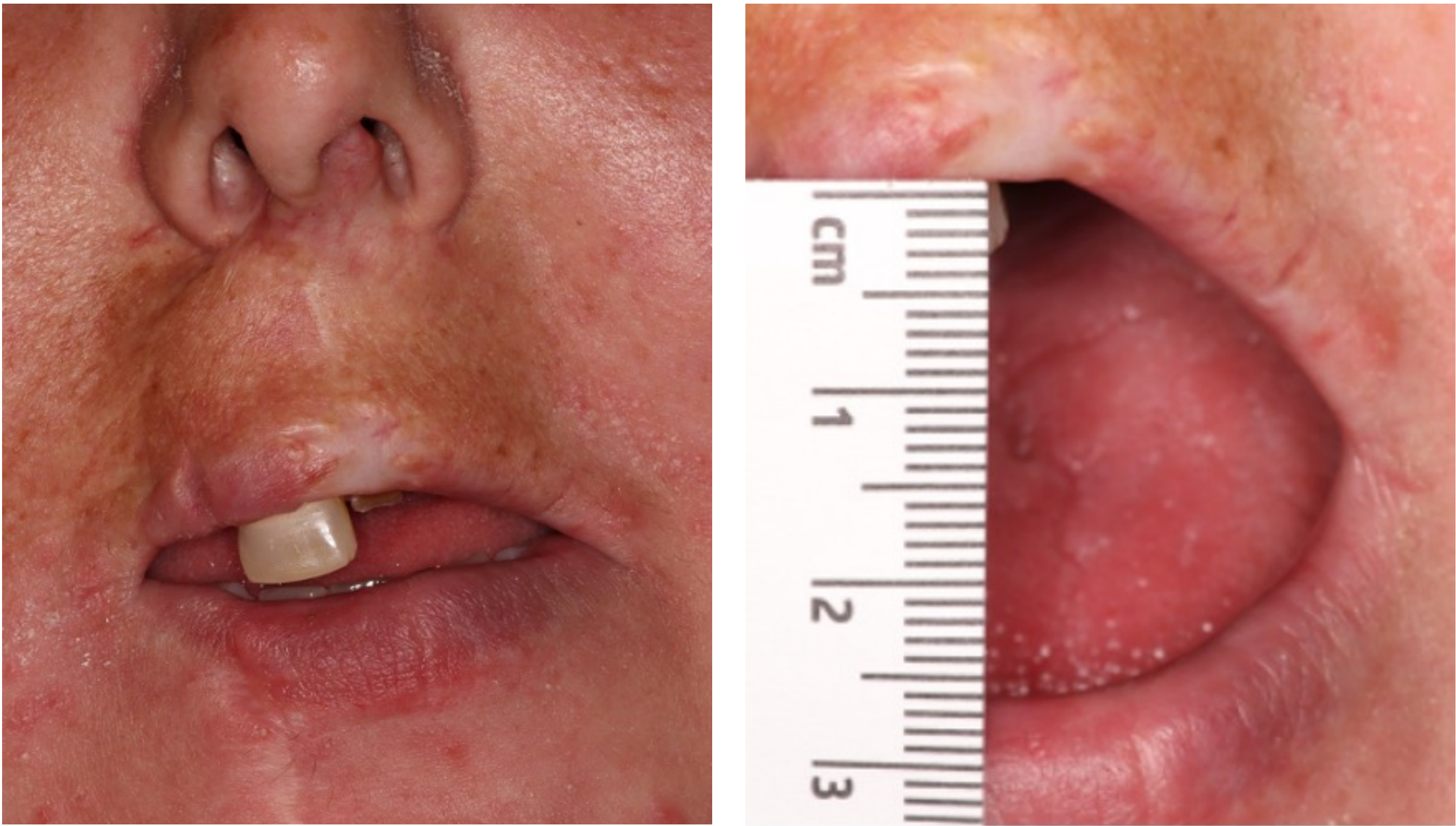


Figure 1. Extraoral photos and demonstration of limited mouth opening.

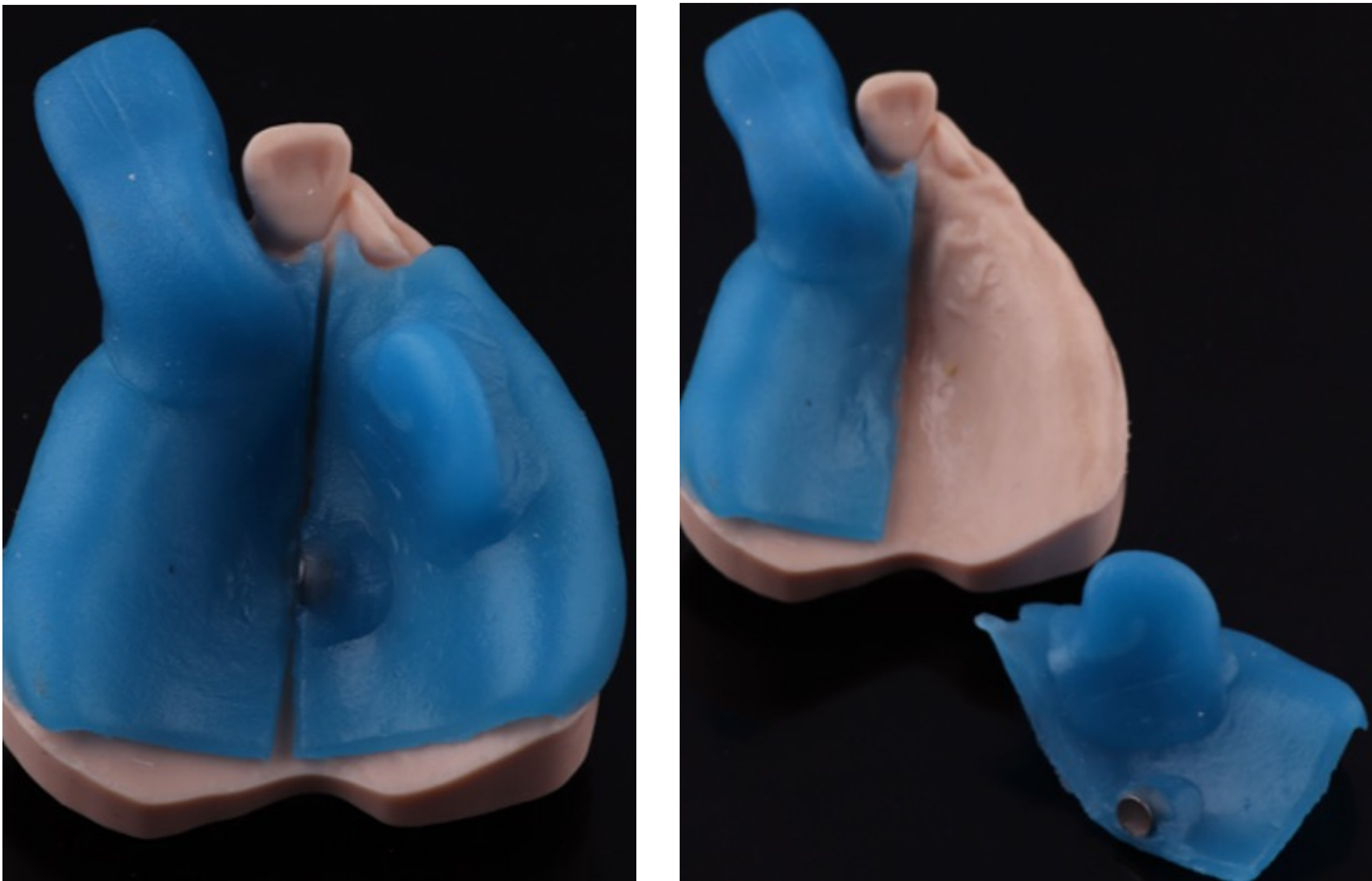


Figure 3. Sectional tray technique with a central magnet at the midline.

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